Charles B. Turrill.

# CALIFORNIA ORANGE PRIMER

FROM
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**E. O. McCORMICK**
PASSENGER TRAFFIC MANAGER

**T. H. GOODMAN**
GENERAL PASSENGER AGENT

SAN FRANCISCO, CALIFORNIA

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A CALIFORNIA ORANGE HARVEST.

# CALIFORNIA ORANGE PRIMER

Where does the Orange come from?

It is probably a native of Southern China, but was introduced into Arabia and Syria from tropical India.

When was it first known in England?

Not until the seventeenth century.

By whom was it brought to America?

Probably by the Spaniards.

Are there many varieties of Oranges?

About eighty, but all have originated from two kinds, the sweet Orange and the bitter Orange of China.

What are the principal Orange lands in the United States?

There are three well-developed Orange regions,—Central and Southern Florida, the Delta region of the Mississippi, and California. Oranges are also grown successfully in Arizona. But the great Orange center of the world to-day is California.

What is the navel Orange?

It is a large seedless Orange, in its origin a freak or accident of nature.

Where was it found?

At Bahia, South America, by a lady traveling through that country in 1869. It was propagated in the Government hot-houses at Washington, D. C., and was at first called the Bahia navel. Being first grown successfully at Riverside, California, it came to be known as the Riverside navel. By common consent, it is now called the Washington Navel Orange.

Is it always seedless?

It has shown no tendency to revert to the common or seeded Orange, and the Washington Navels are regarded as a type in themselves.

How are Oranges propagated?

By cuttings, by layers, and from seeds. They are chiefly grown from seeds. An Orange from the seed is a seedling. To produce a special kind, the young seedling must be grafted or budded. The usual method is to plant the seed of the Orange, and then bud the young stock while in the nursery. Seeds are planted thickly in rough boxes, without bottoms, and covered with cheese cloth. They soon spring up, and grow to the height of 4 or 5 inches by the following year. During the winter, they are still protected by a covering of grass or cloth, except when the days are warm. In the late spring, they are taken out and planted in rows six inches apart, or more, in open grounds. After another year, the two-year old trees, now grown to a height of two feet or more, are budded with buds from selected bearing trees, navel or other varieties as you may elect. When the bud has started into vigorous growth, the young tree above it is cut off, and the graft, or scion, is straightened up, and tied to a stake close beside the parent stock.

After the second year from budding, the young Orange tree will be from 3 to 5 feet in height, with a vigorous root growth. It is now ready for transplanting in the field. It is not difficult to grow your own stock, but generally, this is left to nurserymen. The budding needs to be done by an experienced hand.

What varieties are commonly grown in California?

The Seedling, the Washington Navel, St. Michaels, Maltese, Blood, Valencia, and Mediterranean Sweet.

Are Oranges difficult to grow?

They grow rapidly, if taken from the nursery with proper care. Ten acres may be planted without the loss of a tree. The Orange tree is vigorous, and in the right climate, long-lived, and will bear fruit for a hundred years. An instance is on record of an Orange tree in Italy living to the age of 400 years.

Does the Orange bear regularly?

There are no off years, or years of barrenness, save as the result of frost or low temperature at a critical time.

Perhaps no other tree blossoms more regularly or generously, or ''sets'' its fruit more abundantly. Every Orange country of the world is exposed to loss from unusual frosts or cold waves, but it is upon the entire absence of actual cold in the California winter that its immense citrus industry is chiefly based. This fact is unique in the story of latitudes—that millions of dollars are invested in Orange culture in a latitude that on the Atlantic Coast would freeze the Sacramento River every winter from shore to shore.

Are there no failures of the crop in California?

None, as a whole. There are failures in localities from lack of care, where orchards are planted on low ground, or in exposed places, but there is no record of loss or disappointment from a general failure of the Orange crop in the great Orange centers of California.

Is there such a thing as an Orange Belt in California?

Not strictly so. There is, however, a Thermal Belt distinctly marked by the United States Weather Bureau, and in this belt the Orange grows successfully.

How extensive is this Belt?

This Thermal Belt reaches from San Diego in the south to Tehama and Butte Counties, in the upper Sacramento Valley, 150 miles north of San Francisco. The temperature of this Belt is marked by the Weather Bureau from 60 to 68 degrees. At San Diego the average is 60.2 degrees; at Woodland, in the Sacramento Valley, 60.5 degrees; at Porterville, in the San Joaquin, 63.2 degrees. At Chico, high up in the Sacramento Valley, the average is 63.9 degrees. The distance from San Diego to Chico is about 700 miles, and the Thermal Belt ranges from a few miles to thirty miles in width. This shows the extent of the so-called Orange Belt.

Can Oranges be grown throughout all this region?

Yes, but not everywhere successfully. There are local conditions—of altitude, of soil, and of excess or absence of moisture, which affect the success of Orange growing as a commercial proposition. It is true of Southern California as well. For the most part, the Thermal Belt follows the foothills, and the grower of Oranges must consider the elevation, study the composition of the soil, guard against frosty spots, secure protection from heavy winds, and provide for systematic and sufficient irrigation.

Where are the great Orange centers of California?

At present in Los Angeles, San Bernardino, Riverside and San Diego Counties. The two counties first named produced the first Oranges for commercial purposes. The citrus region of Southern California is almost wholly foothill land—upland, or what the Spanish called "mesa," or table land. The elevation ranges from 300 to 1,800 feet above sea level. But there are various Orange centers in Central and Northern California, where the successful culture of this fruit has been continuous for a number of years. It is only necessary to find suitable elevation and soil. Cold air drains into valleys and low places like water.

What soil is best suited to produce good Oranges?

Decomposed granite, with a clayey red sub-soil is desirable, as it does not bake after irrigation, and even coarse sand and gravel is not objectionable, if the sub-soil is right. Soil that is easily cultivated and readily pulverized is always desirable; but it must be deep and rich, without underlying hardpan on gravel beds. The drainage must be good. Gravelly sub-soils and clayey subsoils are both to be avoided.

Then suitable conditions of soil and climate are found all over California?

Perfectly, and over a vast extent of territory. It is not a matter of theory, but of fact. Many counties of Central and Northern California are shipping Oranges, and the acreage devoted to citrus fruit is increasing year by year. Only intelligent selection is required in locating an orchard.

Can you mention some Counties in Northern California where Oranges are successfully grown?

Very easily. Counties shipping Oranges in increasing quantities are Tulare, Kern, Fresno, San Joaquin, Yolo, Colusa, Sacramento, Placer, Yuba, and Butte. The total shipment for 1901 exceeded 2,000 carloads. There are 300 boxes to the carload, and range from 96 to 180 Oranges to the box. Production will be rapidly increased as young groves come into full bearing.

But why were Oranges first grown in Southern California?

There are various reasons. Orange trees were planted in several of the Mission gardens of the South by the Franciscan Fathers. In 1869 there were still a few trees, fairly well preserved, though long neglected, at the Mission San Gabriel, that were then 80 years old. Then too, the climatic fitness of Southern California for commercial Orange groves was first discovered.

It was a case of quicker logical deduction. From a grove or two planted by adventurous pioneers, it was inferred that Oranges were a predestined crop, and the foothills grew green and golden with trees and fruit. A splendid tree still stands at Bidwell's Bar, near Oroville in the Upper Sacramento Valley, a success from its early planting in the 50's, but it took 40 years to make the connection between that fruitful tree and the successful groves of Northern California. We were slow in getting rid of the notion that in California, as in the East, climate is a matter of latitude. Parallels of latitude cut no great figure here.

Then, again, the North, having a good rainfall, planted deciduous fruits—prunes, pears, peaches, cherries, apricots and extensive vineyards, and the great success of this undertaking delayed the citrus industry, which requires facilities for irrigation. For about fifteen years, this was left to the special attention of Southern California, and the people of that section developed it so magnificently that that portion of the State became the wonder and admiration of half the world.

Then, will the foothills of Central and Northern California become as famous for Oranges as are like regions in the South?

There is no reason to doubt it. All the conditions are favorable, and a vast area—perhaps 1,000,000 acres—will become populous with Orange trees.

The foothills of the Sierra Nevada are farther from the Ocean than like regions in Southern California; the air is drier, the summers warmer, and the fruit not only ripens perfectly, but ripens a little earlier than in the South.

But will not the business be overdone?

Not while the race continues to multiply, and wealth to increase. The South heard the cry of overproduction, when its shipments only equalled 2,000 carloads. To-day it ships with greater ease, 25,000 carloads, and reaches but a fraction of the population. The consumption of the Orange steadily increases, its uses multiply. The market for it will widen indefinitely.

Then the area within which Oranges can be grown commercially, *i. e.*, with profit for shipment, is relatively small. Southern California has about 5,000,000 Orange trees, but what are they among the 80,000,000 of our own population?

What can good Orange land be bought for?

From $50 to $150 an acre. In Southern California, good Orange land is much higher.

Can Oranges be grown without water?

Only in exceptional cases. The Orange tree requires irrigation, and the amount of water supplied must be carefully studied so as not to injure the fruit by excess of moisture, or the tree by lack of it. A water right is usually sold with the land. No one now tries to grow Oranges without irrigation.

What is the cost of trees and planting?

Something depends upon your location, and the price of young trees varies with the years. But in general, this table will be found about right:

| | |
|---|---|
| 10 acres land | $1,250.00 |
| 1,050 trees at 60 cents | 630.00 |
| Preparation of ground and planting | 100.00 |
| Cultivating and irrigating | 200.00 |
| Fencing | 110.00 |
| Taxes and incidentals | 75.00 |
| | $2,365.00 |

By the fifth year, the cost of your orchard will have increased to about $3,725, counting interest on your investment; but the fourth and fifth years will yield in returns say $900, leaving the actual cost at five years $2,825. This is nearly $400 more than is figured by actual growers. The difference is chiefly in estimated returns. Our figures are quite within bounds. An orchard will ordinarily yield one-fourth of a box at three years, one-half a box at four, and a box to the tree at five years. But it is not thought desirable to allow trees to bear and ripen fruit at three years. The point of interest is this—that the crop of the sixth and seventh years will pay the total cost of the orchard and leave a margin. The ten acres will then be worth $6,000. Meanwhile, you have earned your bread and butter at other work, and your investment in Oranges has returned you about $750 a year.

But what income can be counted on at full bearing?

About $150 an acre. This will often be greatly exceeded. I have a friend who gathers $300 an acre from a plat of two and one-half acres. I know very well an orchard that yielded $1,800 an acre, and I lived in the very midst of another grove, whose owner told me that his crop that year would give him a profit of 16 per cent on a valuation of $1,000 an acre. These are exceptional returns. They belong to the past. You and I must get down to the rule of averages. Orange groves are multiplying; competition is affecting prices. But well managed, the industry will pay handsomely. Something depends upon the locality, more upon the man behind the orchard. It is the personal factor in the case that is of most consequence; but ten acres of good Orange trees will yield year by year from $1,200 to $2,000.

Touching continued profits of Orange growing, it is a question first of increased consumption, and to-day the outlook for the Orange grower is very promising. The Orange has been a luxury; it is becoming a necessity. In cold climates it is taking its place as a staple winter fruit. The acid of the California Orange is agreeable, and its flavor sprightly; it is tonic and healthful. The consumption of this fruit per capita is small, and will steadily increase as its desirability becomes better known. Whatever promotes the general health will pass into general use, and this will maintain prices, since the area in which Oranges can be grown is very small in proportion to the lands that cannot produce them. It is, however, chiefly a question whether *you* can be depended on. Intelligent cultivation, irrigating at the right time and in the right way, the guarding

against insect enemies, and the proper picking and packing of the fruit, are the main things. Then, if your location is good, and your choice of varieties has been wise, you can realize a good income from a few acres. Citrus fruit growers in Southern California for 1902 will receive more than $17,000,000 for their crop. In many instances, this will mean $1,000 an acre.

Does Orange growing, year after year, even up well?

It does. It is a safe business. The market may be depended upon, and the climate. But the business will not bear neglect. You cannot raise oranges, any more than apples, without ''eternal vigilance.'' It is the price not of a crop, but of continuous crops. It is the price of a healthy and vigorous orange grove.

Orange culture makes the most fascinating country life in the world, and that the industry will continue to be profitable is fairly certain. This is an age of great wealth. It is widely distributed, and we are but in the dawn of the wealth-producing era. The richest country on the globe will be the United States. And it is an age of rapid transportation. This, too, will increase. We hardly dare to anticipate the development which is coming. A vast population, too, will be here to be served, and the indications are that the use of this delicious fruit—the product only of a limited area of semi-tropical land—will have a vast and continuous increase.

Which are the best varieties of Oranges?

The standards are the Washington Navel, the St. Michael, the Valencia Late, the Bloods, the

Mediterranean Sweets and the Seedling. The superior quality of the Navels grown in California command the market, but the St. Michael and the Valencia are good Oranges, and can be left on the tree until May or June. The St. Michael comes from the Azores, is an early fruit, grows vigorously, and bears heavily. The Maltese and Bloods are also desirable varieties. But the beginner will wisely stay by the large seedless Navel Orange. This is California's pride, and the favorite in the markets of the world. He will also wisely base his planting on the advice of experienced growers. We assume of course, that you are not about to start an Orange grove as a pastime or as a matter of sentiment, but are concerned with it as an investment that will pay. It *will* pay. It will pay in gold coin. But it will pay also in comfort—in solid satisfaction. The business itself is not poetry, but prose, and requires industry, study and expense, but it is prosecuted where the skies are sunny, the breezes balmy, the verdure half tropical, and the whole aspect of nature kindly.

> "Know'st thou the land
> Where the lemon trees bloom,
> Where the gold Orange glows
> In the deep thicket's gloom?"

—that is a land of climatic peace, where living is a joy.

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